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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/792,279

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Juan Manuel Cruz-Hernandez

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EXAMINER

KOVALICK, VINCENT E

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/792,279

Applicant(s)

CRUZ-HERNANDEZ ET AL.

Examiner

Vincent E. Kovalick

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2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9, 10, 13, 14, 16-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 11, 12, 15 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/4/04; 9/14/04 & 10/3/05.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to Applicant's CIP application, Serial No. 10/792,279, with a File Date of March 4, 2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9, 13, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over An et al. USP 6,429,849 taken with Brown, Pub. No. 2002/0159336.

Relative to claims 9, 13, 16 and 17, An et al **teaches** a haptic feedback joystick providing input signals (col. 4, lines 24-67; col. 5, lines 1-67 and col. 8, lines 1-16); An et al. further **teaches** an apparatus, comprising: a signal source, the signal source being configured to output a haptic feedback signal; a driver, the driver being configured to receive the haptic feedback signal and output a drive signal (col. 1, lines 20-24 and Abstract);

An et al. **does not teach** an electro-mechanical transducer being configured to receive the drive signal, the electro-mechanical transducer being configured to have a plurality of operational modes, each operational mode from the plurality of operational modes having at least one resonant mode from a plurality of resonant modes.

Brown **teaches** directional transducers and arrays (pgs. 1/2 paras. 0016-0018); Brown further **teaches** an electro-mechanical transducer being configured to receive the drive signal, the electro-mechanical transducer being configured to have a plurality of operational modes, each operational mode

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from the plurality of operational modes having at least one resonant mode from a plurality of resonant modes (pg. 1, paras.0007 and 0010).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device/methodology as taught by An et al. the feature as taught by Brown in order to put in place the means to receive the said driver signal and in turn active the multi-mode electro-mechanical transducer to the specific resonant mode identified by the drive signal.

4 Claims 10, 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over An et al taken with Brown applied to claims 9, 13 and 17 respectively in item 3 hereinabove, and further in view of Okada (USP 5,907,212).

Relative to claims 10, 14 and 20 An et al. taken with Brown **does not teach** the method steps wherein the electro-mechanical transducer being a first electro-mechanical device, the method further comprising: applying the drive signal to a second electro-mechanical device different from the first electro-mechanical device, the first electro-mechanical device and the second electro-mechanical device collectively operating in one operational mode from a plurality of operational modes in response to the drive signal for the first electro-mechanical device and the drive signal for the second electro-mechanical device.

Okada **teaches** an apparatus provided with electro-mechanical transducers (col. 1, lines 61-67; col. 2, lines 1-67 and col. 3, lines 1-9); Okada further **teaches** the method steps wherein the electro-mechanical transducer being a first electro-mechanical device, the method further comprising: applying the drive signal to a second electro-mechanical device different from the first electro-mechanical device, the first electro-mechanical device and the second electro-mechanical device collectively operating in one operational mode from a plurality of operational modes in response to the drive signal for the first electro-mechanical device and the drive signal for the second electro-mechanical device (col. 2, lines 9-41). It being understood that the controller as taught by Okada (col. 2, line 20) would generate the input signals of different characteristics that would drive the first and second electro-mechanical transducers to address the different required modes.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to

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provide to the device/methodology as taught by An et al. taken with Brown the feature as taught by Okada in order to put in place the means to address the individual electro-mechanical transducers to control the operational modes of each.

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over An et al taken with Brown applied to claim 17 in item 3 hereinabove, and further in view of Sherman et al. (USP 5,73,280).

An et al. taken with Brown **does not teach** an apparatus wherein the electro-mechanical transducer is a piezoelectric transducer.

Sherman et al **teaches** an ultrasound energy delivery system and method (col. 3, lines 54-67 and col. 4, lines 1-35); Sherman et al. further **teaches** an apparatus wherein the electro-mechanical transducer is a piezoelectric transducer (col. 1, lines 55-67 and col. 2, lines 1-6).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device/methodology as taught by An et al. taken with Brown the feature as taught by Sherman et al. in order to put in place a transducer with the performance characteristics yielded by a piezoelectric technology.

Allowable Subject Matter

6. Claims 11-12, 15 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Relative to claim 11 the major difference between the teachings of the prior art of record (USP 6,429,849, An et al. Pub. No. 2002/0159336, Brown and USP 5,735,280, Sherman et al.) and that of the instant invention is that said prior art **does not teach** the electro-mechanical transducer being a first electro-mechanical device, the method further comprising: applying the drive signal to a second electro-mechanical device different from the first electro-mechanical device, the first electro-mechanical device and the second electro-mechanical device collectively operating in one operational mode from a plurality of operational modes in response to the drive signal for the first electro-mechanical device and

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the drive signal for the second electro-mechanical device, the plurality of operational modes including a first operational mode and a second operational mode; and changing from the first operational mode to the second operational mode, at least one the resonant mode of first electro-mechanical device and the resonant mode of the second electro-mechanical device for the first operational mode differing for the second operational mode.

Regarding claim 12 the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art **does not teach** the electro-mechanical transducer being a first electro-mechanical device, applying the drive signal to a second electro-mechanical device different from the first electro-mechanical device, the first electro-mechanical device and the second electro-mechanical device collectively operating in one operational mode from a plurality of operational modes in response to the drive signal for the first electro-mechanical device and the drive signal for the second electro-mechanical device, the first operational mode being associated with the applying the drive signal to the first electro-mechanical device when the drive signal to the second electro-mechanical device is not applied, the second operational mode being associated with the applying the drive signal to the second electro-mechanical device when the drive signal to the first electro-mechanical device is not applied.

Relative to claim 15, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art **does not teach** the electro-mechanical transducer being a first electro-mechanical device, the method further comprising: applying the drive signal to a second electro-mechanical device different from the first electro-mechanical device, the second electro-mechanical device and the first electro-mechanical device collectively having the plurality of operational modes, the plurality of operational modes including a first operational mode and a second operational mode; and changing from the first operational mode to the second operational mode by altering a characteristic of the drive signal.

Regarding claim 19 the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art **does not teach** the said apparatus, wherein the electro-mechanical transducer is an electro-active polymer.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	7,161,580	Bailey et al.
U. S. Patent No.	6,232,697	Mizumoto
U.S. Patent No.	4,490,841	Chaplin et al.

To Respond

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E. Kovalick whose telephone number is 571-272-7669. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Vincent E. Kovalick
July 13, 2007



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